



REAL TIME DETERMINATION OF GAS SOLUBILITY AND RELATED PARAMETERS IN MANUFACTURING PROCESSES

FIELD OF THE INVENTION

[0001] This invention provides means for improving control of continuous processes that handle liquids, and therefore provides benefits to manufacturers by enabling them to effectively monitor and operate their processes. Data generated by this invention can be used to control the True (air-free) or Apparent (air-containing) Density or Entrained Air content of liquids within optimum ranges, for instance in paper coating processes and in the manufacture of such products as food products (ketchup, mayonnaise, ice cream, syrup), carbonated beverages, personal care products (skin cream, shampoo), pharmaceutical products, paints, petroleum blends, and the like. This invention is useful in any industry where information pertaining to liquid density or entrained air and other gases is employed to optimize industrial processing.

BACKGROUND OF THE INVENTION

[0002] Those skilled in the arts of processing liquids desire to know how much air and/or other gases are entrapped and dissolved therein for a variety of reasons. Entrapped air can cause undesired foaming during processing, e.g. in papermaking and in the preparation of foodstuffs, and can result in disruption of film products, e.g. from paints. Entrained gases distort such processing parameters as density, making precise control of processes impossible. U.S. Patent No. 5,365,435 illustrates the utilization of slurry density determination in fluid processing at an oil well site.